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ABSTRACT

This paper studies the extent of Internet connectivity and usage among Southeast Asian libraries and how many of them are using the Internet to provide electronic information resources and services through their homepages. It also presents a case study of the Universiti Sains Malaysia (USM) Library's strategy in promoting the use of the Internet among the university's academicians and students. Some of the steps taken include developing their homepage into a gateway to electronic resources in the library and on the Internet and conducting subject-specific training workshops geared towards the needs of academicians and researchers. (Author/MES)

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Internet use in libraries in South East Asia with special reference to the role of the Universiti Sains Malaysia Library in promoting the use of the Internet for teaching and learning

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Abstract

This paper studies the extent of Internet connectivity and usage among Southeast Asian libraries, and how many of them are using the Internet to provide electronic information resources and services through their homepages. It also presents a case study of the University Sains Malaysia (USM) Library's strategy in promoting the use of the Internet among the University's academicians and students. Some of the steps taken include developing their homepage into a gateway to electronic resources in the Library and on the Internet, and conducting subject-specific training workshops geared towards the needs of academicians and researchers.

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Paper

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INTRODUCTION

The INTERNET use in libraries is creating an environment that is constantly changing.

Libraries now provide services to their users that were previously impossible. New trends in the computer technology are allowing libraries to do old things with more efficient and effective tools.

This paper will attempt to describe the use of the Internet in libraries in 5 countries in the Southeast Asian region, namely Malaysia, Singapore, Thailand, Indonesia and Brunei. This is followed by a case-study of how an academic library has taken advantage of the new technology as part of a campus-wide initiative to "go virtual".

INTERNET IN SOUTH EAST ASIA

The phenomenal growth of the Internet can be measured in various ways. In August 1981, the Internet Society counted 213 host computers on the Internet. The Internet Society's Domain Survey (www.ISOC.org) done in July 1998 identified 36,739,000 hosts on January 1997, and the Internet Society's projection for the number of hosts when we enter the new millenium is 124 million.

A check on international connectivity with regard to the South East Asian region is as follows (http://www.navigators.com/globe16b.gif version 16, June 15, 1997).

i. **All the countries in this region with the exception of Myanmar, Lao People's Democratic Republic Cambodia and Vietnam have Internet connectivity.**

ii. Lao People's Democratic Republic, Cambodia and Vietnam have E-mail only (UUCP, Fido Net)

iii. Myanmar has no connectivity at all.

The connectivity can be tabulated as follows:-

a. Internet (Entities with International IP Internet links)

I operational, accessible from the entire open IP Internet

b. UUCP (Entities with domestic UUCP sites which are connected to the Global Multiprotocol Open Internet)

u minimal one to five domestic UUCP sites

U widespread, more than 5 domestic UUCP sites

c. FIDONET (Entities with domestic FIDONE sites which are connected to the Global Multiprotocal Open Internet)

f minimal with one to 5 domestic FIDONET sites

F widespread with more than 5 domestic FIDONET sites

Brunei Darussalam	I - -
Cambodia	- u -
Indonesia	I U F
Loa People's Democratic Republic	- u f
Malaysia	I U F
Myanmar (Union of)	- - -
Philippines	I u F
Singapore	I u F
Thailand	I U F
Vietnam (Socialist Republic of)	- U -

(Source www.webographics.com/webometry/ISOC/version.15 text)

Some general observations on the use of Internet in libraries in this region reveal the following trends:

i. Homepages exist for all the major academic libraries in each country. Twenty-eight academic libraries were identified as using the Internet to make their presence felt in the global networking structure.

ii. All of these libraries provided general information about their organizations in their websites. This included information on services, collections, facilities, opening hours, membership terms and borrowing privileges, library rules and staff information. The information provided here is the electronic version of what is usually provided in a library handbook and library brochures.

iii. Almost half of the libraries surveyed provide access to the library's OPAC via the homepage. The access is mainly via Telnet. Only a handful of libraries have web-based access.

iv. Fifty-seven percent of the libraries surveyed have links. These links provide paths to other sites with relevant external information sources. Web-based access is related to the library integrated system in use.

v. Systematic efforts to expand access to information outside the walls of libraries are being carried out through the creation of virtual subject libraries. These very comprehensive and focused links are the results of librarians trained in evaluating Internet sites carefully selecting quality resources.

vi. Several libraries have ready-to-use links to other OPACS in their homepages. The OPACS are not confined to what's available in their own country but include, in some cases, exhaustive and comprehensive links to relevant libraries world wide.

vii. Online reference query is another feature utilising the Internet that is incorporated into homepages. Although the number of libraries using this service facility to create a virtual reference counter is small, its use is very important in the context of digital libraries as the role of digital libraries is not only to provide content but also services of libraries electronically.

viii. The use of the Internet as online gateways to access aggregated databases produced in the US and UK is increasing. Several vendors have now rented bandwidth to improve access time to their full-text documents, including electronic journals complete with full-text, illustrations, photographs, graphs, diagnostic images and charts.

ix. The amount of local content accessible via the Internet is increasing as more and more libraries increase their efforts to create the digital library. Several libraries have their bulletins online, and one library has digitised 10 of its University course text books and 15 public lectures. Exam papers are also made accessible and 2 libraries have digitised them. The websites of libraries in Singapore provide almost all of the services required or expected of digital libraries. However, as far as the neighbouring countries are concerned, most of the facilities and services of a digital library can only be found in the national or academic libraries.

x. Libraries in Malaysia and Thailand provide network library resources in English and their national languages. One academic library in Thailand has its homepage in Thai. The language of communication is a factor for many to be considered in Internet usage. Presently, English is the predominant language, but it is expected that other languages such as Chinese will gain importance as a medium of communication.

xi. Among public libraries, Singapore has the most well developed infrastructure. It has developed MIDAS - Lib (Media Information Delivery and Access System for Libraries) as a one-stop service point for uses of public libraries, schools and campus. MIDAS - Lib is fully multimedia and provides single access to multiple services such as Internet, CD-ROM titles, AV titles, inter relay chat and video-conferencing. The Sabah State Library in Malaysia uses its homepage to distribute a wide variety of community information such as information on government departments, local travel information, and service groups.

PROMOTING THE USE OF THE INTERNET FOR TEACHING AND LEARNING AT USM

Internet use as an extension of the classroom or as a vehicle for higher what does this mean education, is becoming increasingly widespread. The Internet is now being used as a powerful supplement to the traditional ways that students study and learn in lecture halls, tutorials, laboratories and in the preparation of assignments. There is a very close fit between the structures and processes of the Internet and the structures and processes of teaching and learning in the University's traditional forms of education

The Internet provides access to unlimited sources of information and search engines are continuously being upgraded to provide efficient ways to help users a find what they want. Libraries are using the Internet to create gateways to what has been termed a massive library system, where people can roam through the electronic equivalent of book stacks via a desktop workshop. The electronic equivalent offers the ability to integrate text with charts, graphs, photographs, sound, video and other forms of multimedia. Librarians are now playing a vital role in identifying, evaluating and making available quality electronic documents. Criteria such as accuracy, comprehensiveness, balanced and accurate presentation and currency as well as style and functionality are being utilized to select Internet sites of value for their users.

The Internet contains a wealth of online course materials that are easily available to students from a distance. Densely woven, multidimensional or multilayered and highly demanding new course materials can be delivered instantaneously to students to reinforce and enhance the traditional components of university teaching and learning. For example, the use of video in management case studies over the Net means that students can analyse not only just text and statistics, but also the range of attitudes, behaviour and expressions that exist in organizations thousands of miles away.

The basic activity of communication is another point of compatibility between the Internet and academia. The oldest and most important form of education is the constant exchange of ideas and opinions between students and lecturers, and among researchers. This process of dialogue, including argument and debate, challenging one another and testing propositions, can be easily

transferred into electronic form more over the Internet is open 24 hours of the day and communication can be carried on at all hours, and across distances. The Internet allows study groups to work online, and tutorials can be carried out as electronic discussions. In all these ways, the Internet creates an environment where energetic discussion and debate, one of the most fundamental educational processes, can be carried out. Although continuously not a substitute for direct human contact, electronic communication has some features that do permit an actual extension of the scope, continuity and even the quality of certain forms of interaction.

Finally, the Internet is playing a significant role in the emerging theories of education, where the academics act as facilitators, providing guidance, drawing students and steering discussions. The positive charge will come from the students becoming the active agents and leaders for further educational development and change. Universities have a responsibility to exert leadership in the imaginative and thoughtful uses of the best of the new technology for the purposes of better teaching and learning. With all these factors in mind, the library made a conscious decision to take the teaching role in preparing our academics for the challenge.

At Universiti Sains Malaysia, the need to harness the potential of the Internet was first felt in 1995. Way back then, although amazingly a short time ago, most of the library staff at USM had no idea what the Internet was. Our first introduction to the Internet was a course conducted by Dr. Edna Reid in September 1995. The experience can be likened to a group of people going through a dark narrow tunnel, with Edna at the front holding a torch leading the way. At the end of the tunnel, we could hardly see any light. Today, I can say we are still in the tunnel, but the light is very much brighter and nearer.

With the appointment of Dr. Edna Reid as our consultant in 1995, the Library began formulating its IT strategy, with the main aim of providing electronic information resources to the campus community. At this point, I would like to refer to Dr. Reid's draft proposal for USM. Her first concern was to upgrade the skills of the USM librarians, not only in using the Internet for obtaining information, but to create electronic information for our users. Our role was seen as not only providing information, but disseminating it by electronic means, becoming the navigators and guiding our users through the Internet jungle. Many workshops and seminars have been held since then, as shown in the table below. Most USM Librarians have attained an acceptable level of competence in using the Internet.

7-8 Sept. 95	Information Services on the Internet
7 Dec. 96	Internet as a Tool for the Provision of Creative and Innovative Information Products and Services
3-4 Feb. 97	Workshop on Conceptual Design of Value-Added WWW Homepages
9 May 97	Train the Trainers Workshop 1
12-13 Feb. 98	Train the Trainers Workshop 2
25 July 98	Internet in Academic Libraries : the Past, Present and Future
24 - 25 Feb. 99	Train the Trainers Workshop 3

The second strategy towards IT is to "design a host of networked services such as a virtual library, interactive manipulation of remote databases and discipline-specific Internet training and navigational support". The Library began building its homepage, with the aim of making it a gateway to the Library's resources and services, as well as external worldwide resources through the Internet. The USM Virtual Library was launched by the Minister of Education in August 1997. The Library Homepage has rapidly grown to encompass full-text and electronic resources, subject-specific Internet resources, exam papers, USM publications, and many other resources. We have subscribed to the EBSCO database, Academic Search Full Text Elite (an indexing and abstracting online database which also provides over 1,100 full text journals), Inside Web of the British Library, and four of UMI's Proquest Databases (Applied Science and

technology, Computing, Telecommunications, Medical). Access to all the databases mentioned is through the Library's Homepage. The CD-ROM LAN of 14 titles will eventually be converted to Web-based as well.

The third strategy is to upgrade the skills of the academic staff and researchers in identifying, evaluating, accessing and using Internet electronic and multimedia resources to support teaching and research.

With the aim of upgrading the skills of the academic staff and researchers at USM in utilising the Internet for these purposes, we had first to find out the Internet usage patterns and information needs among the academics. A questionnaire survey was carried out in December 1996. Two schools were selected - the School of Industrial Technology (to represent the Pure and Applied Science Schools) and the School of Social Sciences (to represent the Non-Science Schools). The results of the survey would enable the Library to assist the academic staff and researchers in identifying, evaluating and accessing relevant teaching and research resources on the Internet, as well as convert the Library's Homepage into a gateway to relevant Internet resources. The Library would also be able to plan discipline-specific training for the academics to use these resources. A focus group was also formed and met on 21st February 1997. The group comprised 4 academic staff each from the two schools, four librarians and Dr. Edna Reid. Thirdly, interviews were held with three academic staff each from the two Schools.

The data from the survey were subsequently analysed by Dr. Edna Reid. In this slide (Figures 2-3), I have highlighted some interesting findings in terms of Internet usage by the scientists and the social scientists. When asked about the types of Internet resources which they used or were aware of, the results showed that the scientists use and are aware of the Internet more than the social scientists.

The survey, focus group and personal interviews showed that the majority of academic staff from the two Schools were keen to attend workshops on Internet navigation, Evaluation of Internet resources, Subject-specific Internet resources, and Using the Internet for research.

Owing to this encouraging response from the academics regarding Internet training, a Task Force consisting of seven librarians was formed in July 1997. Its responsibilities include : (i) Coordinating all Internet training activities for academic staff in the University (ii) Planning and providing training for librarians regarding the conducting of workshops (iii) Preparing the syllabus and training materials for the workshops (iv) Building up a team of Internet specialists among the librarians at USM.

To begin, The Task Force worked out the strategy for planning the workshops for the various Schools of the University. Members felt that they needed information on the Internet usage and requirements of the academics so that they could tailor the courses to fit the academics' needs. It was decided that before each workshop was held, a questionnaire would be sent to the targeted School. After that, the syllabus and training materials had to be prepared or modified accordingly. The subject specific homepages also had to be prepared by Subject Specialist teams who would act as presenters and facilitators during the workshop. These homepages would then be introduced to the academics during the workshops. Before the actual workshops were held, publicity brochures on the Workshops and the Subject Homepages would be distributed to targeted participants. Two weeks before the workshops, simulated sessions were to be held to enable the presenters to get a feel of the workshops, as well as to make last minute improvements to the content and style of the presentations. All librarians, whether they were directly involved or not, would be invited to attend these sessions. I am happy to report that all those who attended participated actively and offered many suggestions to improve the workshops. A day before the workshop, the computer laboratory was prepared. Training materials in the form of HTML files were loaded into all the participants' computers and the PowerPoint presentations were tested. At this point, I would like to mention that without the enthusiastic support and contribution by all the librarians, none of the workshops would have succeeded.

The first Workshop held was for the School of Social Sciences in November 1997. To date, nine workshops have been held, as shown below. At the end of every workshop, questionnaires were handed to the participants to assess its usefulness. Based on the replies, I would like to provide a brief analysis of the workshops.

i. Attendance (No. of participants)
The target number of participants for each workshop was 15-20, so as to enable all participants to receive adequate guidance during the Workshops. The ideal ratio would be 1 facilitator to 2 participants.

The actual number of participants for the workshops were as follows:

1. Social Sciences	13
2. Industrial Technology	15
3. Humanities	16
4. Educational Studies	23
5. Management	14
6. Biological Sciences	19
7. Pharmaceutical Sciences	21
8. Chemical Sciences	20
9. Humanities & Communication	25
	166

ii. Relevance of topics

Participants were asked to grade the relevance of each topic dealt with in the Workshops on a scale of 1-5, 5 being very relevant and 1 being not relevant. The answers revealed that the session on Subject Directories/Search engines was most relevant, with an average of 93.5% of the participants considering it to be so, and the session on Evaluating and Citing Internet Resources the least relevant.

Subject Directories/Search Engines	93.5%
Saving Information (Downloading)	90.6%
E-Mail	85.6%
Mailing Lists/Newsgroups	83.9%
Introduction to the Internet/Netscape Browser	80.2%
CRAYON	79.7%
Evaluating & Citing Internet Resources	76.3%
Overall Average	84.3%

iii. Subject coverage

Participants were asked to grade whether the various topics were adequately dealt with in terms of subject coverage. The results were as follows:

Subject Directories/Search Engines	79.3%
Introduction to the Internet/Netscape Browser	74.2%
CRAYON	71.8%
Saving Information (Downloading)	71.3%
E-Mail	69.1%
Mailing Lists/Newsgroups	68.9%
Evaluating & Citing Internet Resources	62.2%
Overall Average	71.0%

While some felt that a more in-depth presentation for some topics was required, there were some who felt that too much detail was given. It was quite a difficult task to resolve this problem, and we had considered offering courses for different levels of Internet literacy. Overall, the session on Subject Directories/Search Engines was most adequately covered, while Evaluating & Citing Internet Resources was considered the least adequately covered. The contents of the various topics had undergone many changes over the course of time, in response to the feedback received from the participants. Presenters and facilitators meticulously scrutinised all presentations and slides used at each simulation session, and made corrections wherever necessary to suit the expected participants. New information was added to keep up with the ever-changing Internet environment. It became an exciting learning experience for many of the librarians as they shared new developments regarding the Net. It also promoted a strong team spirit, as librarians felt that all of them had contributed a great deal towards the success of the workshops.

iv. Allocation of Time

Participants were asked to grade whether the time allocated for each session was adequate. The results were as shown below. The session on E-mail was considered too short. Here we would like to clarify that the session on E-Mail only covered the techniques for finding E-Mail addresses and joining free E-mail services, but participants felt that they should also learn the mechanics of e-mailing. Before conducting the workshops, the Library was informed that there already were E-mail courses organised by another section in the University, so it decided not to deal with that aspect. However, it was apparent that many did not attend the courses. The time allocated for the session on CRAYON was most suitable. Again here I would like to add that the time allocated to each topic had also been constantly adjusted depending on the participants' needs. During the Workshop for the Humanities, we had to repeat the session on 'Saving Information from the Internet' on another day, because most of the participants needed more time to do the hands-on exercises.

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On the whole, the workshops were successful. Comments received include 'Friendly and helpful facilitators', 'good participant's manual', 'very informative and beneficial workshop'. Useful suggestions from the participants included 'More time for hands-', '2-days not enough', 'more local content of homepages', 'more workshops of this kind', 'workshop to be held once-a-year to update academics on recent Internet developments', etc. After every workshop, the Task Force and the librarians involved had a discussion on the feedback, and how the future workshops could be improved further, taking into account all the comments received.

The main problem that was faced was the difficulty in getting a computer lab, and workshops could only be held during the vacation when students were away. Another problem seemed to be the varying computer literacy levels of the participants. On the one hand, we have people who do not even know how to handle a mouse, and on the other hand, we have people who are already FTPing. We may have to explore the possibility of offering workshops at different

levels of instruction, for the beginner, and for the more advanced participants.

What are our future plans?

i. Well, more workshops, of course! We only managed to train 166 academics, which accounted for 22% of the academics in USM's Main Campus.

ii. At present we have 9 Virtual Subject Libraries in our Library Homepage. By next year, more subject homepages will be added. Hopefully we will have someone who's sole responsibility is to look after the Homepage, and see that updating is done regularly and systematically.

iii. More electronic resources will be made available to our users, in line with our aim of becoming a Virtual Library.

iv. More "Train the Trainers" sessions will be held to update the librarians' knowledge about the Internet.

v. We are planning for our own teaching laboratory.

vi. The Library will also assist academics in planning Net-based instruction in the form of tutorials and interactive courses.

vii. It may even be possible to offer training programmes to outside people (librarians, teachers, commercial sector, etc.)

viii. We could also think of organizing a Seminar for Librarians.

ix. We intend to have our own Intranet to serve our users better.

CONCLUSION

From this analysis of the use of INTERNET, it appears that there is no end point to which the INTERNET can be utilized by libraries. Librarians must be made aware that a sense of permanence is elusive in the INTERNET environment and a continuous investment in training for skills development, software construction approaches and computer technology must be made. Only then can this enabling technology be utilised for information access, communications, and education.

Figure 1

Not available. Please contact authors.

Figure 2 : Using the Internet

Not available. Please contact authors.

Figure 3 : Not Aware

Not available. Please contact authors.

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